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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:

Applicant: Chongying Xu, et al.

Application No.: 10/015,326

Date Filed: December 13, 2001

Title: METHOD FOR REMOVAL OF
IMPURITIES IN CYCLIC
SILOXANES USEFUL AS
PRECURSORS FOR LOW
DIELECTRIC CONSTANT
THIN FILMS

) Docket No.: 2771-515 (7486)

) Examiner: Manoharan,
Virginia

) Art Unit: 1764

) Confirmation 2946
) No.:

) Customer 25559
) No.:



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PATENT TRADEMARK OFFICE

EXPRESS MAIL CERTIFICATE

I hereby certify that I am mailing the attached documents to the Commissioner for Patents on the date specified, in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231, and Express Mailed under the provisions of 37 CFR 1.10.


Dennis Maxwell

December 2, 2002

Date

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**RESPONSE TO RESTRICTION REQUIREMENT IMPOSED IN NOVEMBER 1, 2002
OFFICE ACTION IN U.S. PATENT APPLICATION NO. 10/015,326**

Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action dated November 1, 2002 in the above-identified U.S. patent application, wherein a restriction requirement was imposed against the following claim groups:

- I. Claims 1-29, drawn to a process for reducing the concentration of water and optionally at least one impurity for a cyclosiloxane precursor, classified in class 203, subclass 41;
- II. Claims 30-44, drawn to a CVD method of depositing a low dielectric constant thin film in a substrate from a $[\text{SiO}]_n$ cyclosiloxane precursor, classified in class 427, subclass 491; and
- III. Claims 45-46, drawn to 1,3,5,7 tetramethylcyclotetrasiloxane purified by a process, and films produced therefrom, classified in class 556, subclass 450+;

applicants hereby elect, with traverse, the Group I claims 1-29.

Applicants' reasons for the traversal of the restriction requirement are set out below, and on such basis, applicants request the Examiner to reconsider his restriction of the pending claims, and to withdraw same in favor of consolidated examination and prosecution of claims 1-46 pending in the application.

An Examiner's authority to require restriction is defined and limited by statute:

If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. 35 U.S.C. § 121, first sentence (emphasis added).

The implementing regulations of the Patent and Trademark Office include the mandate that restriction is appropriate only in cases presenting inventions which are both independent and distinct, 37 C.F.R. §§1.141-142. Without independence and distinctness, a restriction requirement is unauthorized.

In the present application, the species which the Examiner has grouped separately are not "independent and distinct" so as to justify the restriction requirement. The Group I claims 1-29 are directed to a process for reducing the concentration of water and optionally at least one impurity for a cyclosiloxane precursor by adsorbent contacting and/or azeotropic distillation.

The Group II claims 30-44 relate to a CVD method of depositing a low k thin film on a substrate from a cyclosiloxane precursor that has been purified by adsorbent contacting and/or azeotropic distillation, viz., a cyclosiloxane precursor produced by the process of the Group I claims. The Group III claims 45-46 relate to a specific cyclosiloxane purified by adsorbent contacting and/or azeotropic distillation, viz., a cyclosiloxane produced by the process of the Group I claims.

Thus, all claims have in common a purification of the cyclosiloxane composition by the adsorbent contacting and/or azeotropic distillation techniques. Accordingly, these Group I, II, and III claim species cannot be considered "independent" of one another, and are clearly interrelated and interdependent, not "independent and distinct."

The interdependence of these aspects of the invention is confirmed --indeed, it is mandated-- by the description requirements of 35 U.S.C. §112 which compel disclosure of all three aspects of the invention in the one application which Applicants have filed, since the "product-by-process" composition of the Group III claims under §112 must satisfy the "how to make" (Group I method of making claims) and "how to use" (Group II CVD method of use claims) requirements of the statute.

Further, the Examiner's analysis of the aspects of the invention as claimed, is in error. The Examiner in the paragraph bridging pages 2 and 3 of the November 1, 2002 Office Action has stated

**"The group I invention is directed to a purification process
... not required in the group II invention"**

but this is INCORRECT - see, for example, Group II claim 30, in which the methodology of the Group I claims is recited, in Claim 30 sub-paragraphs (1), (2) and (3).

Further, the Examiner's statement at page 2 of the Office Action that "Inventions I and II are unrelated." is inconsistent with the Examiner's statement on following page of the Office Action that "Inventions I & II and III are related as process of making and product made."

Still further, the Examiner's statement at page 3 of the Office Action that

**"the product as claimed can be made by another and
materially different process"**

is INCORRECT, and ignores the fact that the claimed product is a product-by-process composition, and therefore it is made by the same process - see, for example, claim 45, which recites a cyclosiloxane compound "purified by a process selected from the group consisting of..."[followed by the recital of the purification process, in terms consistent with those of claim 1].

In addition, as a matter of public policy, the courts have recognized that it is in the public interest to permit applicants to claim several aspects of their invention together in one application, as the applicants have done herein. The CCPA has observed:

We believe the constitutional purpose of the patent system is promoted by encouraging applicants to claim, and therefore to describe in the manner required by 35 U.S.C. §112 all aspects as to what they regard as their invention, regardless of the number of statutory classes involved. In re Kuehl, 456 F.2d 658, 666, 117 U.S.P.Q. 250, 256 (CCPA 1973).

As a further point, applicants respectfully suggest that in view of the continuing increase of official fees and the limited character of any applicant's financial resources, a practice that arbitrarily imposes restriction requirements may become prohibitive and thereby contravene the constitutional purpose to promote and encourage the progress of science and the useful arts.

It is vital to all applicants that restriction requirements issue only with the proper statutory authorization, because patents issuing on divisional applications that are filed to prosecute claims that the Examiner held to be independent and distinct can be vulnerable to legal challenges alleging double patenting. The third sentence of 35 U.S.C. §121, which states that a patent issuing on a parent application "shall not be used as a reference" against a divisional application or a patent issued thereon, does not provide comfort to applicants against such allegations. The Court of Appeals for the Federal Circuit has declined to hold that §121 protects a patentee from an allegation of same-invention double patenting, Studiengesellschaft Kohle mbH v. Northern Petrochemical Co., 784 F.2d 351, 355, 228 U.S.P.Q. 837, 840 (Fed. Cir. 1986); and in Gerber Garment Technology Inc. v. Lectra Systems Inc., 916 F.2d 683, 16 U.S.P.Q. 2d 1436 (Fed. Cir. 1990) that court held that §121 does not insulate a patentee from an allegation of "obviousness-type" double patenting, and in fact affirmed the invalidation on double patenting grounds of a patent that had issued from a divisional application filed following a restriction requirement.

Furthermore, it is far from clear that the step of filing a terminal disclaimer is available to resolve a double patenting issue that arises after the issuance of a patent on the divisional application.

All these considerations indicate that the imposition of a restriction requirement with inadequate authority can lead to situations in which an applicant's legitimate patent rights are exposed to uncertainty and even extinguished. Accordingly, to protect a patentee's rights and to serve the public's interest, the Examiner is not to require restriction in cases such as the present application wherein various interrelated aspects of a unitary invention are claimed.

For the above reasons, Applicants respectfully request that the Examiner withdraw the restriction requirement and examine all of the aspects of the present invention as claimed in claims 1-46. If the Examiner nonetheless retains the restriction requirement, the rejoinder procedure of MPEP §821.04 is hereby requested to be applied by the Examiner.

Respectfully submitted,



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